

upper surfaces covered with very prominent tubercles; fingers brown, tipped with white, smooth, except their internal margins, which are armed with 3 or 4 tubercles. Ambulatory legs densely covered with hairs.

Male, length  $\frac{6}{16}$  in., breadth  $\frac{9}{16}$  in.

Female, length  $\frac{5}{16}$  in., breadth  $\frac{8}{16}$  in.

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ART. LVI.—*On some New Zealand Aphroditæ, with Descriptions of supposed new Species.* By T. W. KIRK, Assistant in the Colonial Museum.

[Read before the Wellington Philosophical Society, 30th October, 1878.]

*Aphrodita.*

*Halithea*, Savigny, Syst. Annel. 11 and 18. Lam., An. s. Vert., v. 306.

*Aphrodita*, Leach, in Suppl. Encyclop. Brit. I., 452; Aud. and M. Edw., Litt. de la France, II., 63; Blainville in Dict. des Sc. Nat. LVII., 455; Fleming in Encyclop. Brit., Edit. 7, XI., 221; Johnston in Ann. Nat. Hist. II., 427.

Body ovate or oblong, the back convex, covered with fifteen pairs of scales, either concealed by a felt or exposed; the venter distinctly separate, flat, marked with the dissepiments and a longitudinal mesial furrow; antenna one, mesial, small; the palpi two and long; segments 39, with scales on the second, fourth, fifth, seventh, and every alternate segment to the twenty-fifth, and on the twenty-eighth and thirty-second; the intervening segments with a dorsal cirrus; feet stout, biramous, with three fascicles of bristles, two on the dorsal and one on the ventral branch; and each foot has a ventral setaceous cirrus; bristles various, simple or compound, with a spine in each fascicle; no anal styles.

*A. aculeata.*

*Aphrodita aculeata*, Linn. Sys. X., 655; XII., 1084.

Body from 3 to 8 inches long, oval, narrowest behind, convex dorsally; the back of an earthy colour; roughish, with a thick close coat of hair and membrane, forming a sort of skin, which entirely conceals the scales; the sides clothed with long silky green and golden hairs clustered in fascicles, and glistening like burnished metal, with blackish-brown spiniform bristles intermixed; ventral surface flat, often light coloured and dotted, sometimes dark brown, obsoletely ribbed across; head small, entirely concealed, roundish, with two round clear spots or eyes on the vertex; antenna minute; palpi large, subulate, flesh-coloured or dusky, jointed at the base, where they approximate, but are separated by a black membranous crest; mouth with a large edentulous proboscis; the orifice encircled with a short, even, thick-set fringe of compound penicillate filaments divided into two

sets by a fissure on each side; each filament has a short stalk, with a tuft of numerous forked papillæ on its summit; exterior to the orifice of the proboscis there are four fleshy tubercles placed at the angles; scales fifteen pairs, roundish, smooth, thin and vesicular, blotched with black stains and specks, the first pair small, laid over the head, the anal pair oval; feet thirty-nine pairs, largest and most developed near the middle of the belly, very small and approximate at the anus, biramous, the branches wide asunder; the superior carries, in a sort of crest-like fashion, the long, flexible, brilliant-coloured bristles which form the silky fringe on each side of the body, and above them some still more delicate hairs, which, by their intertexture, constitute the membrane covering the scales, and with which the strong spiniform bristles are intermixed, placed in a sort of cross series; the inferior branch is armed with three rows of stout, short bristles; in the upper row only two or three, which are longer and stouter than those of the next row, in which there are five or six, and which again are stouter but less numerous than those in the lower row; spine golden-yellow, conical, smooth; superior cirrus long, subulate, bulged at the base; the inferior short and conical; anus large, with a dorsal aspect, encircled with several tentacular cirri.

“The very vivid iridescent hues, which the hairs of this remarkable worm reflect, render it an object of wonder and surprise to the most incurious; they are not equalled by the colours of the most gaudy butterfly, and rival the splendour of the diamond beetle. It creeps at a slow pace, and in its progress a current of water is ejected at short intervals, and with considerable force, from the anus. When placed in fresh water, the creature gives immediate signs of its painful situation, and soon dies, first ejecting a white milky fluid, and in the agony of death, a large quantity of blackish-green turbid liquor. The size and strength of the proboscis is remarkable, and not less so the structure of the filaments which garnish the orifice. The œsophagus is short; the stomach and intestine seem to be alike and inseparable; together they form a straight intestine, sometimes with a wide dilation in some part of its canal, with a velvety inner surface folded into longitudinal plaits near the termination at the anus.” (Cat. Worms, B.M., p. 104.)

I have quoted Dr. Johnston's descriptions and remarks at some length in the hope that the attention of local collectors being called to this branch of our fauna, we shall soon possess better specimens of this very interesting group than are at present to hand.

Unfortunately our specimen, which is very young, does not show the brilliant iridescent colours mentioned above; it is of a uniform dull brown, but after a very careful examination and comparison with two specimens

from Europe contained in the collection of Annelids in the Colonial Museum, I have not the slightest hesitation in referring it to this species; it was obtained, together with specimens of the following species, amongst a mass of tangled seaweed, thrown up in August last, at Worsler Bay.

*Lepidonotus.*

*Lepidonotus*, Leach in Ann. Phil. XIV., 205 (1819), and in Supp. Encyclop. Brit. I., 452.

*Lepidonote*, Oersted, Annul. Dan. Consp. 12; Annul. Dorsibr. 11.

*Polynoë*, Savigny, Syst. Annel. 20. Lam. An. s. Vert., V. 308, Aud. and M-Edw. Litt. de la France, II., 74. Cuv. Rég. Anim., III., 207. Johnston in Ann. Nat. Hist., II., 428 and 431. Williams, Rep. Brit. Assoc. 1851, 217.

*Eumolphe*, Blainville in Dict. des Sc. Nat., LVII., 457.

Body oblong, flattened, obtuse and rounded at both ends, composed of a definite number of segments, the back covered with two rows of scales; head distinct with two pairs of eyes on the sinciput; proboscis fringed with simple tentacles at the orifice, and furnished with two jaws; antennæ 3; palpi 2; tentacular 2 on each side; these are similar in structure, and jointed only at the base; scales naked, 12 placed over every alternate segment, so that the 12th is on the 23rd; if there are more scales, the succeeding are on every third segment; feet well developed, biramous, but the branches are almost connate, furnished with two fascicles of bristles, the superior in a spreading tuft, the inferior in a flattish brush, a spine on each fascicle; bristles simple, stout, the superior tapered to a serrulate point; the inferior with a claw-like point, and flattened underneath on one side of the shaft, where it is roughened with spinous tentacles in claw-set transverse series; anal segment with styles.

“*Lepidonotus* is easily distinguished from *Aphrodita* by the number of the antennæ, by the more powerful armature of the mouth, and by the part of the body at which the scales cease to alternate with the cirri. The back is either entirely covered with scales, or naked in the middle, the scales in the latter case being less developed, and not meeting on the mesial line.”

“The *Lepidonoti* are carnivorous. They prey on living invertebrates, and the strong do not hesitate to kill the weak of their own and allied species; they live in obscurity on rocky shores, and can move with considerable quickness. Some of them swim easily in a wriggling manner, but they hasten to find the bottom. They have the power of renewing the scales, which are frequently removed by abrasion and injury.”

*Lepidonotus squamatus.*

*Aphrodita squamata*, Linn. Syst. X. 655; XII. 1084.

*Lepidonotus squamatus*, Johnston, Cat. Worms B.M., p. 109.

“Body generally about one, rarely two inches long, depressed, linear-oblong, of equal breadth at both ends, of a uniform cinereous colour, rough; scales twelve on each side, rather large, ovate, imbricate, rough with brown

granulations, ciliated on the external margin, the overlapped smoother than the exposed portion, for the granules on the former are more minute than on the latter; the anterior scales are smaller and rounder than the others, and completely cover the head, which is a sub-triangular pink or purplish corneous plate, furnished with four small eyes; antennæ three, the central one largest, bulbous near the point; palpi two, longer than the antennæ, swollen near the apex; the tentacular cirri similar to the superior cirri of the feet, these are white, with a blackish ring at the bulb where the acumination commences, retractile, originating from above the dorsal branch of every alternate foot, and under the scales; the last three pairs of feet each with a cirrus; feet twenty-five pairs, obtuse, sub-bifid, the dorsal branch shorter and less than the ventral, each terminated with a brush of stiff brown bristles, and under the ventral branch there is a small setaceous cirrus, and also a fleshy spine at its junction with the belly; bristles when removed golden-yellow, those of the dorsal branch slenderest, gently curved, pointed, and serrulate for about half their length, those of the ventral branch stouter, slightly bent near the top, and serrulated with a double series of teeth on the outer side of the bend, each tuft of bristles enclosing a dark brown straight spine, the inferior stouter than the upper one; ventral surface straw colour, prismatic, marked with the viscera, and sometimes spotted with black near the base of the feet." (Cat. Worms, B.M., p. 107.)

Two very fine specimens of this species were obtained at Worser Bay in August last.

*Lepidonotus giganteus*, sp. nov.

Body elliptical, rather broader posteriorly than in the front; convex dorsally, of a brown colour, tinged with slate; scales ovate, imbricate, coarsely granulate, projecting beyond the sides of the body, towards the posterior and lateral margins of each scale the granulations assume the character of short stout spines, external margins ciliated, the overlapped smoother than the exposed portion; anterior scales smaller than the others, sub-circular, very coarsely granulous, completely covering and projecting beyond the head; twenty-five pairs of feet, sub-bifid, the dorsal branch much the smaller, and carrying a bunch of *silky hairs*, while the ventral is armed with a bundle of *coarse bristles* of a deep golden colour. Under the ventral branch is a fleshy cirrus. A very obtuse fleshy spine marks the junction of each foot with the belly; ventral surface a pale yellowish white.

Length, 4 inches; breadth,  $1\frac{4}{10}$  inches.

*Hab*: Wellington.